

ABSTRACT

5 In accordance with various aspects of the invention, CXCR4 agonists,
including SDF-1 polypeptides and SDF-1 polypeptide homologues, may be
used in reducing the rate of hematopoietic cell multiplication. Methods of the
invention may comprise administration of an effective amount of an CXCR4
agonist to cells selected from the group consisting of hematopoietic stem cells
and hematopoietic progenitor cells. Cells may be treated *in vitro* or *in vivo* in a
10 patient. A therapeutically effective amount of the CXCR4 agonist may be
administered to a patient in need of such treatment. Patients in need of such
treatments may include, for example patients requiring bone marrow or
peripheral blood stem cell transplantation.